

Figure 1: Data Aggregation Network Architecture

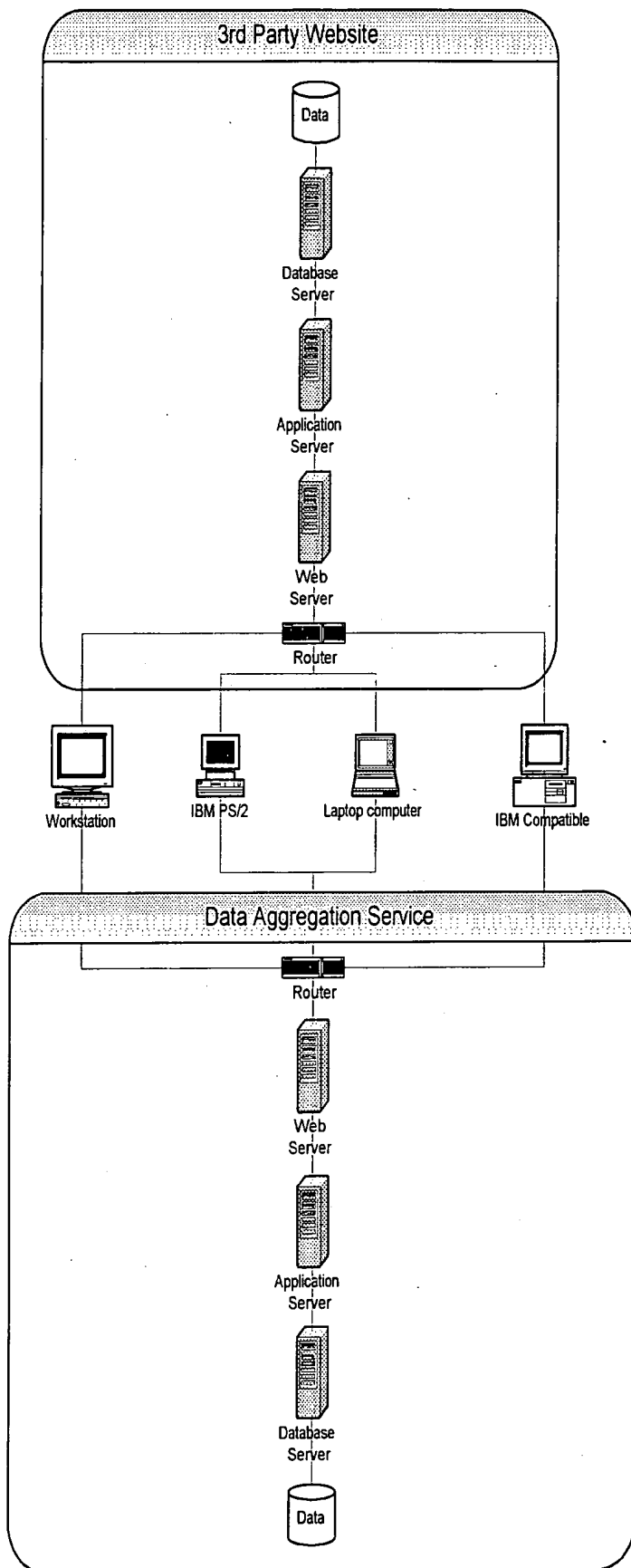
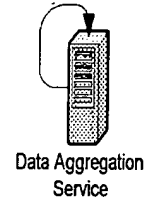
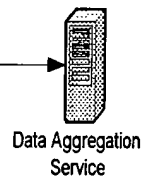


Figure 2: Data Aggregation With Client Pull and Server-Side Profile

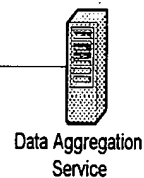
Step 1: Data Aggregation Service generates a request for the Data Acquisition Application to acquire



Step 2: Data Acquisition Application polls the Data Aggregation Service for a request



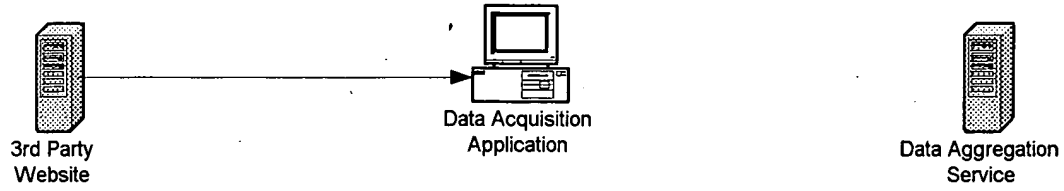
Step 3: Data Acquisition Application downloads a request from the Data Aggregation Service, perhaps after a delay in placing the request in the request queue to simulate a human user so as to hide the automated nature of the data request



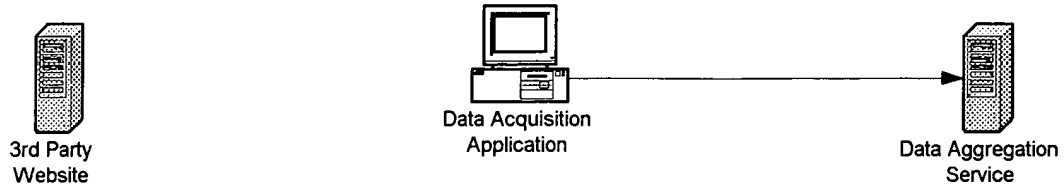
Step 4: Data Acquisition Application sends request to 3rd Party Website, perhaps after a delay to simulate a human user so as to hide the automated nature of the data request and perhaps after logging into the 3rd party website



Step 5: 3rd Party Website sends response to Data Acquisition Application



Step 6 (S2P2S2P2S only): Data Acquisition Application returns response to Data Aggregation Service. This step occurs in the S2P2S2P2S case, but not in the S2P2S2P case.



Step 7: Process repeats

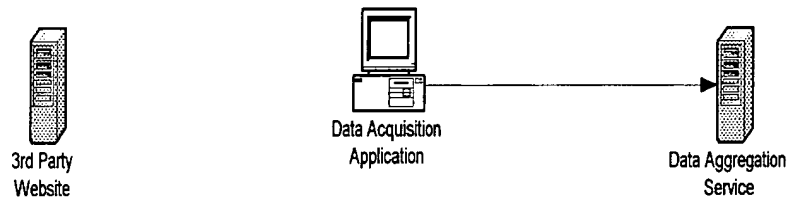


Figure 3: Data Aggregation With Server Push and Server-Side Profile

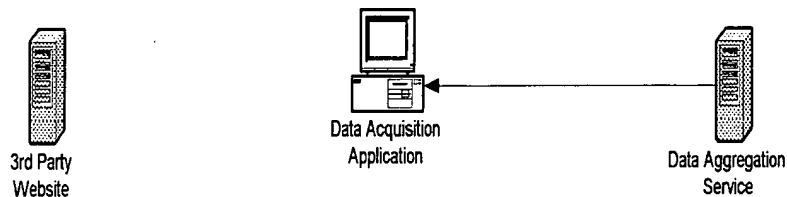
Step 1: Data Aggregation Service generates a request for the Data Acquisition Application to acquire



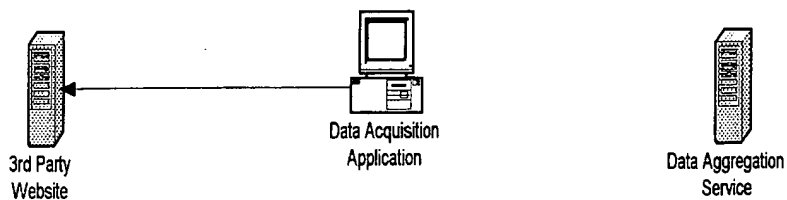
Step 2: Data Acquisition Application opens a socket connection to the Data Aggregation Service



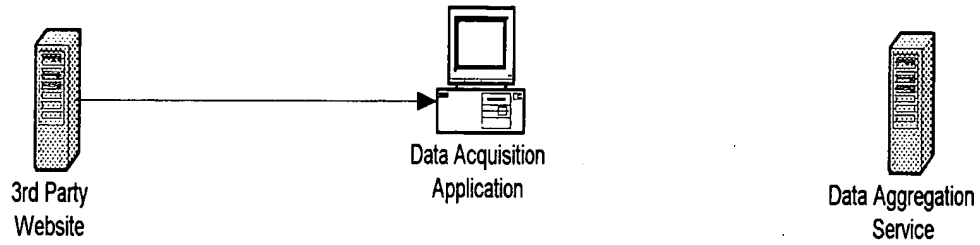
Step 3: Data Aggregation Service pushes a request to the Data Acquisition Application, perhaps after a delay to simulate a human user so as to hide the automated nature of the data request



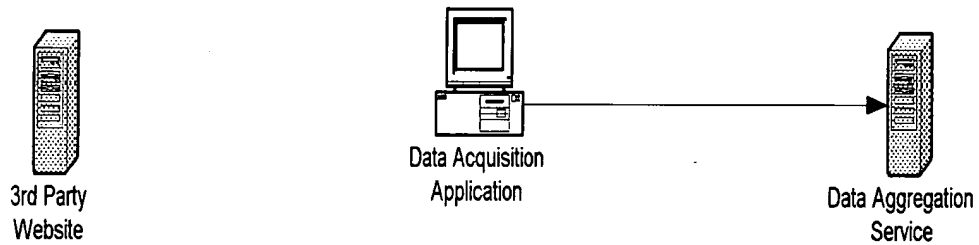
Step 4: Data Acquisition Application sends request to 3rd Party Website, perhaps after a delay to simulate a human user so as to hide the automated nature of the data request and perhaps after logging in to the 3rd party website



Step 5: 3rd Party Website sends response to Data Acquisition Application



Step 6 (S2P2S2P2S only): Data Acquisition Application returns response to Data Aggregation Service. This step occurs in the S2P2S2P2S case, but not in the S2P2S2P case.



Step 7: Process repeats

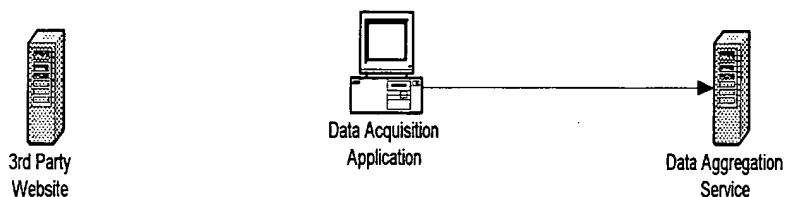


Figure 4: Data Aggregation With Client Pull and Client-Side Profile

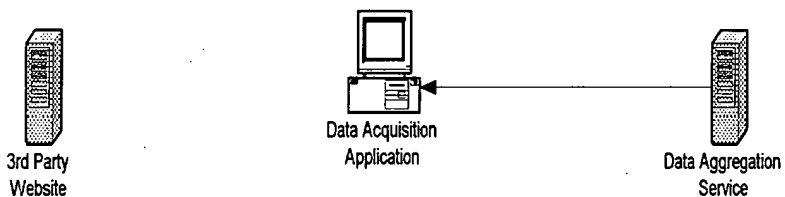
Step 1: Data Aggregation Service generates a non-specific request for the Data Acquisition Application to acquire



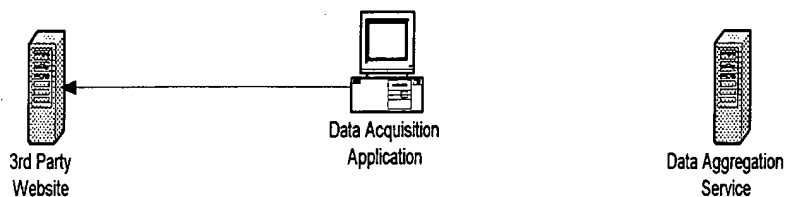
Step 2: Data Acquisition Application polls the Data Aggregation Service for a request



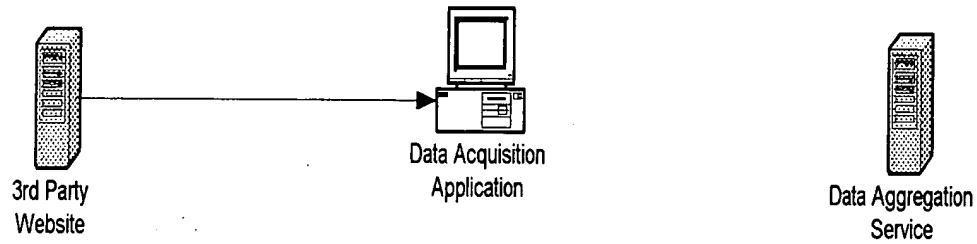
Step 3: Data Acquisition Application downloads non-specific request from the Data Aggregation Service, perhaps after a delay in placing the request in the request queue to simulate a human user so as to hide the automated nature of the data request



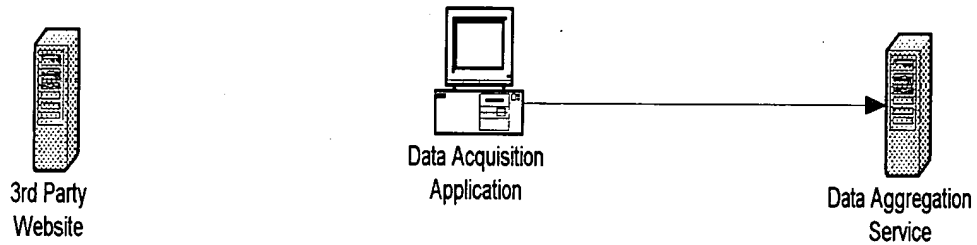
Step 4: Data Acquisition Application combines non-specific request with preference profile information to form specific request that it then issues to a 3rd Party Website, perhaps after a delay to simulate a human user so as to hide the automated nature of the data request and perhaps after logging into the 3rd party website



Step 5: 3rd Party Website sends response to Data Acquisition Application



Step 6 (S2P2S2P2S only): Data Acquisition Application returns response to Data Aggregation Service. This step occurs in the S2P2S2P2S case, but not in the S2P2S2P case.



Step 7: Process repeats

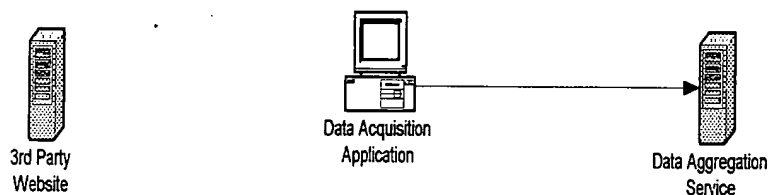


Figure 5: Data Aggregation With Server Push and Client-Side Profile

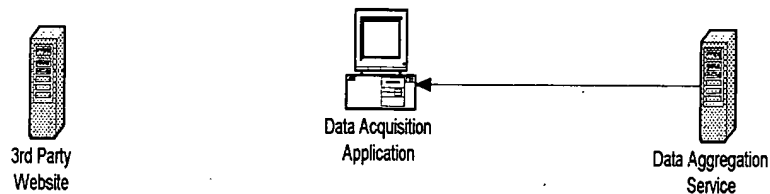
Step 1: Data Aggregation Service generates a non-specific request for the Data Acquisition Application to acquire



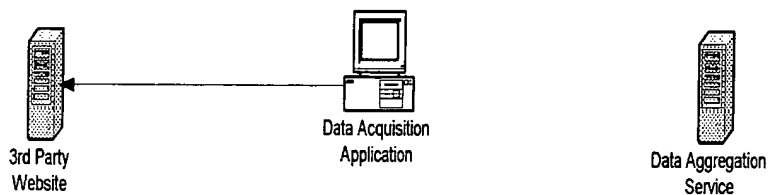
Step 2: Data Acquisition Application opens a socket connection to the Data Aggregation Service



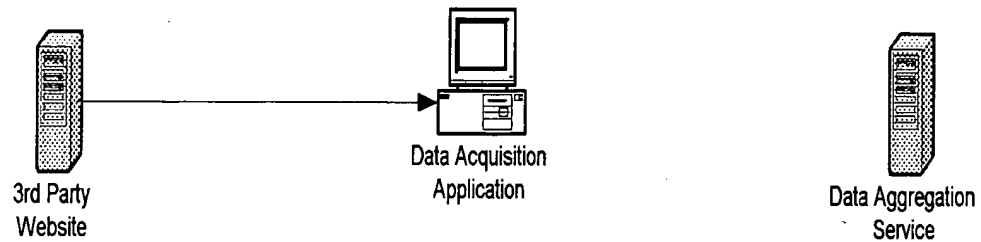
Step 3: Data Aggregation Service pushes a non-specific request to the Data Acquisition Application, perhaps after a delay to simulate a human user so as to hide the automated nature of the data request



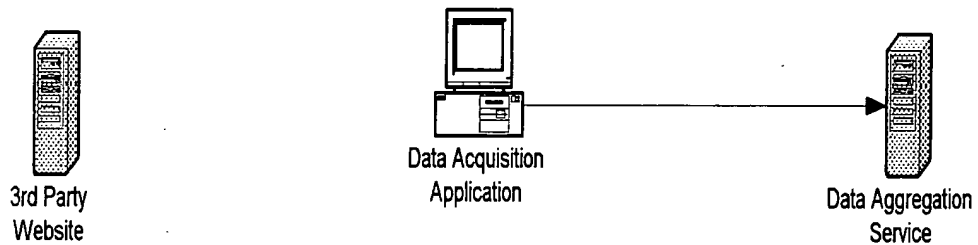
Step 4: Data Acquisition Application combines non-specific request with preference profile information to form specific request that it then issues to a 3rd Party Website, perhaps after a delay to simulate a human user so as to hide the automated nature of the data request and perhaps after logging into the 3rd party website



Step 5: 3rd Party Website sends response to Data Acquisition Application



Step 6 (S2P2S2P2S only): Data Acquisition Application returns response to Data Aggregation Service. This step occurs in the S2P2S2P2S case, but not in the S2P2S2P case.



Step 7: Process repeats



Figure 6a: Server-Side Data Aggregation

Step 1: Data Aggregation Application generates Client-Specific Request based on Data Collected From Client Applications, End User Profiles, Knowledge of 3rd Party Websites, and Other Data

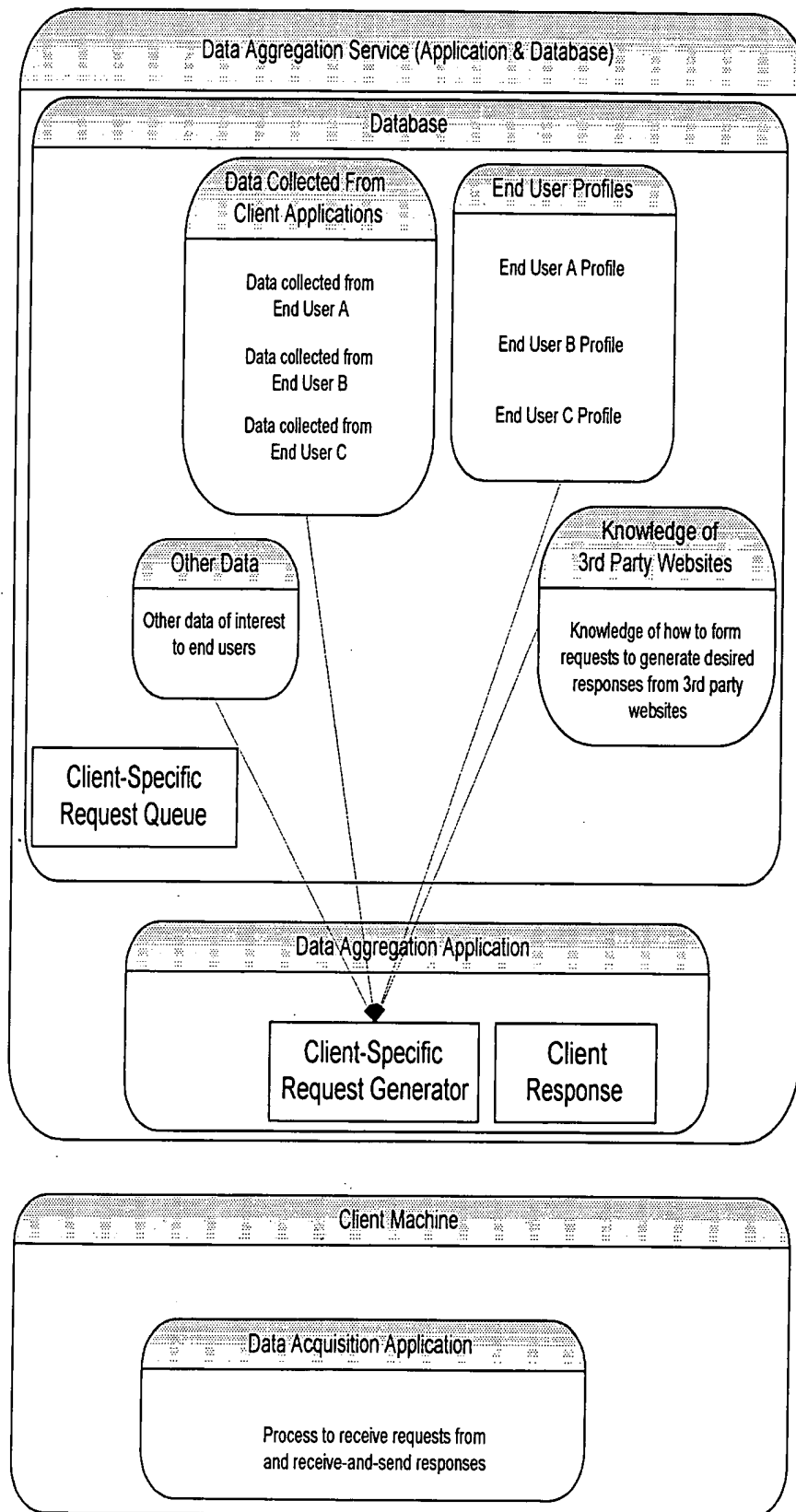


Figure 6b: Server-Side Data Aggregation

Step 2: After request has been generated, it is stored in the Client-Specific Request Queue associated with the client's end user's profile for pickup by or delivery to the client

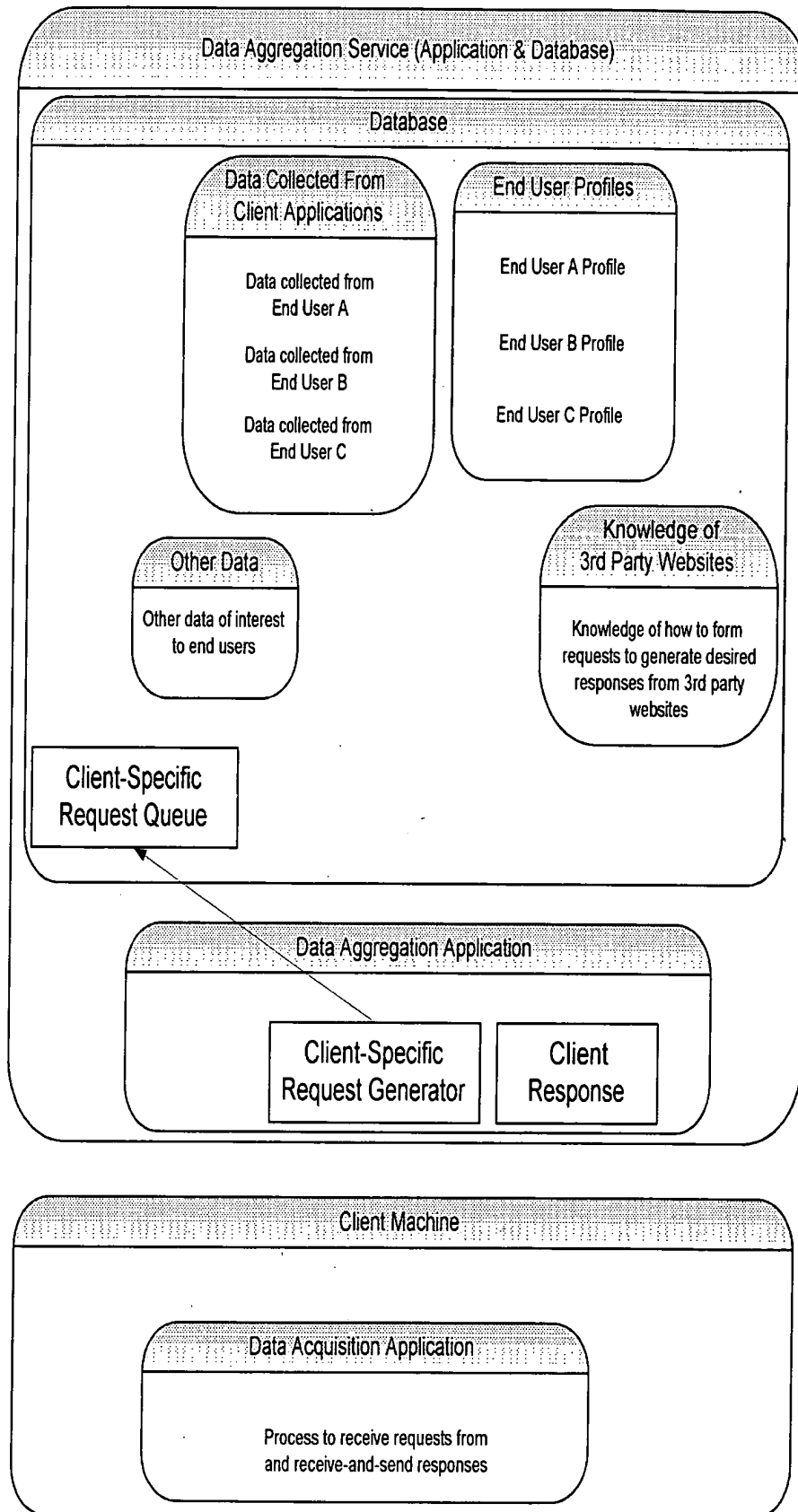


Figure 6c: Server-Side Data Aggregation

Step 3: Data Acquisition Application downloads request(s) from its Client-Specific Request Queue (or request is pushed to the Data Acquisition Application over an open socket connection) and the Data Acquisition Application then issues request(s) to 3rd Party Website(s)

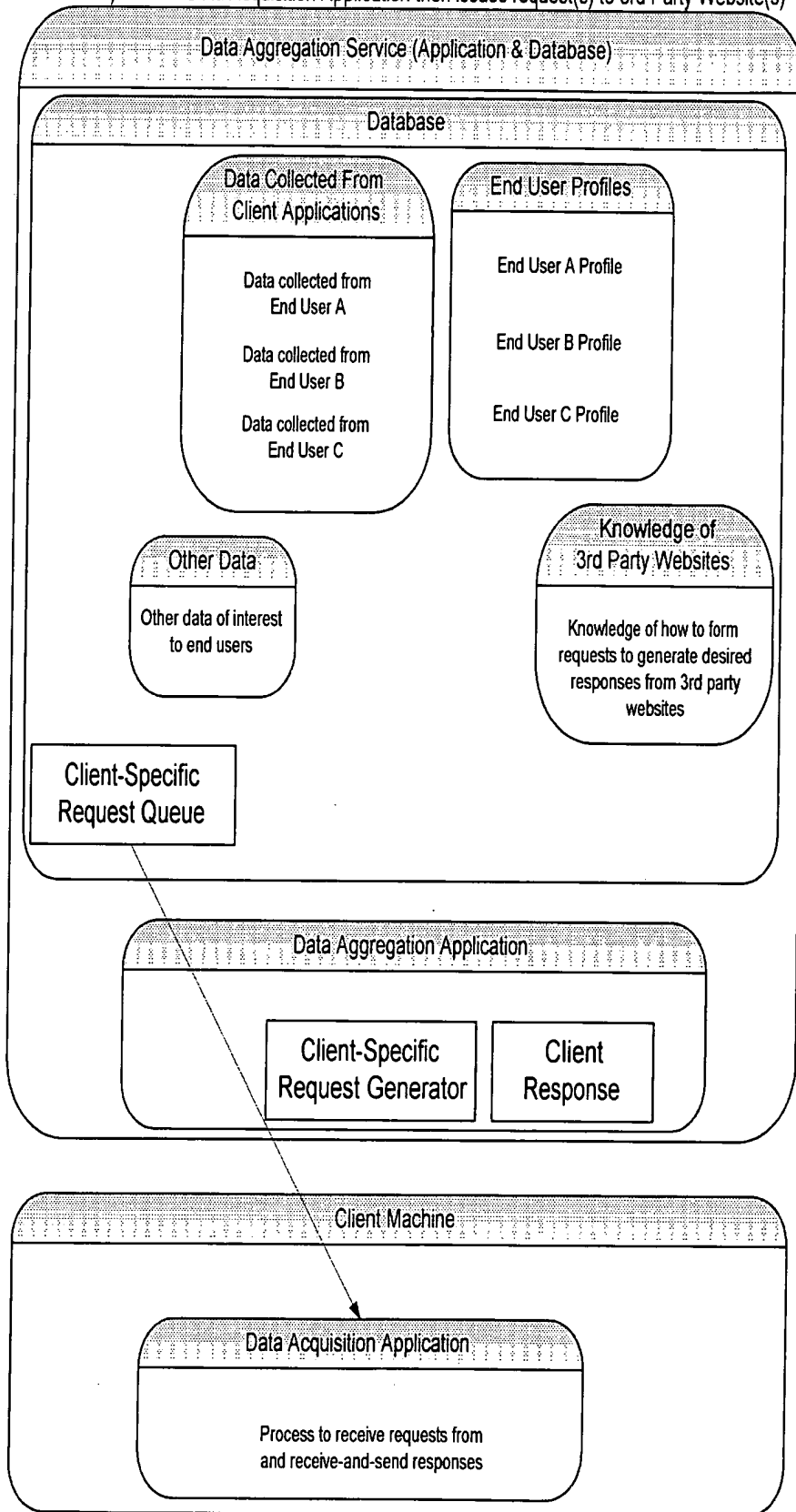


Figure 6d: Server-Side Data Aggregation

Step 4: Data Acquisition Application receives response(s) to request(s) sent to 3rd Party Website(s) and returns those responses (perhaps after modifying and/or processing them) to the Data Aggregation Application

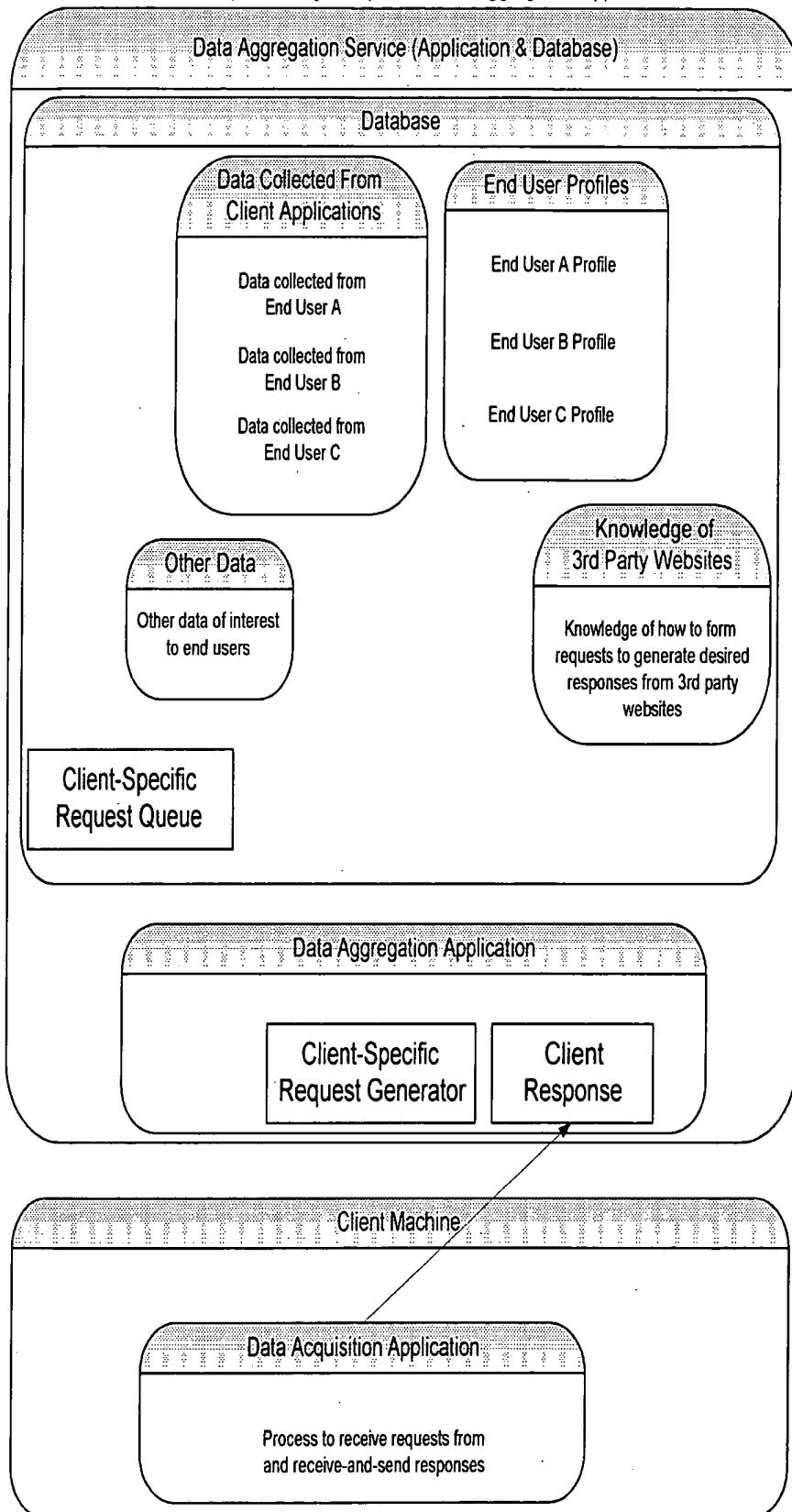


Figure 6e: Server-Side Data Aggregation

Step 5: Data Aggregation Application stores data received from the Data Acquisition Application (perhaps after modifying and/or transforming it) in the database

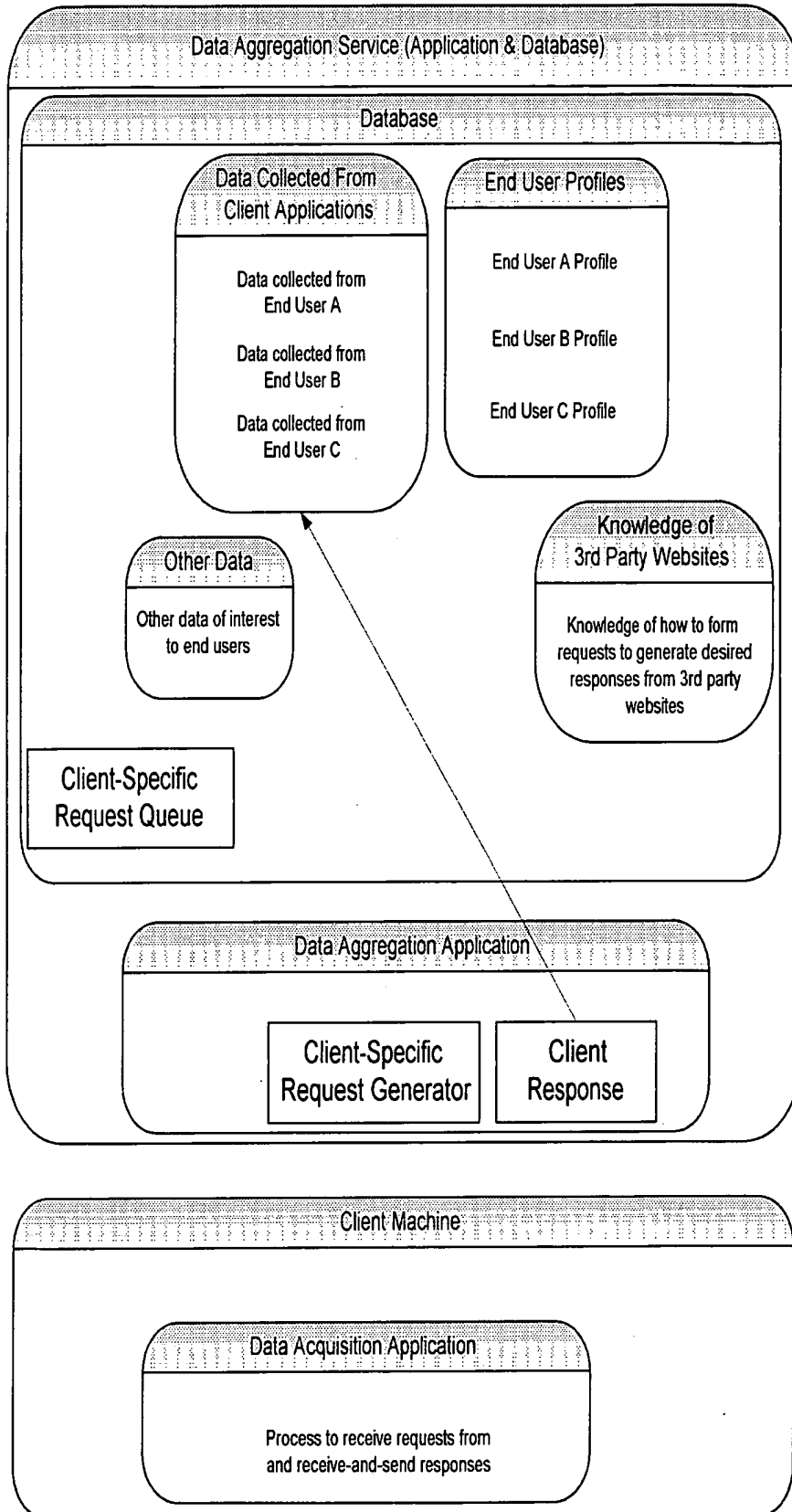


Figure 6f: Server-Side Data Aggregation

Step 6: Repeat Steps 1 - 5 as many times as necessary
to acquire all desired data

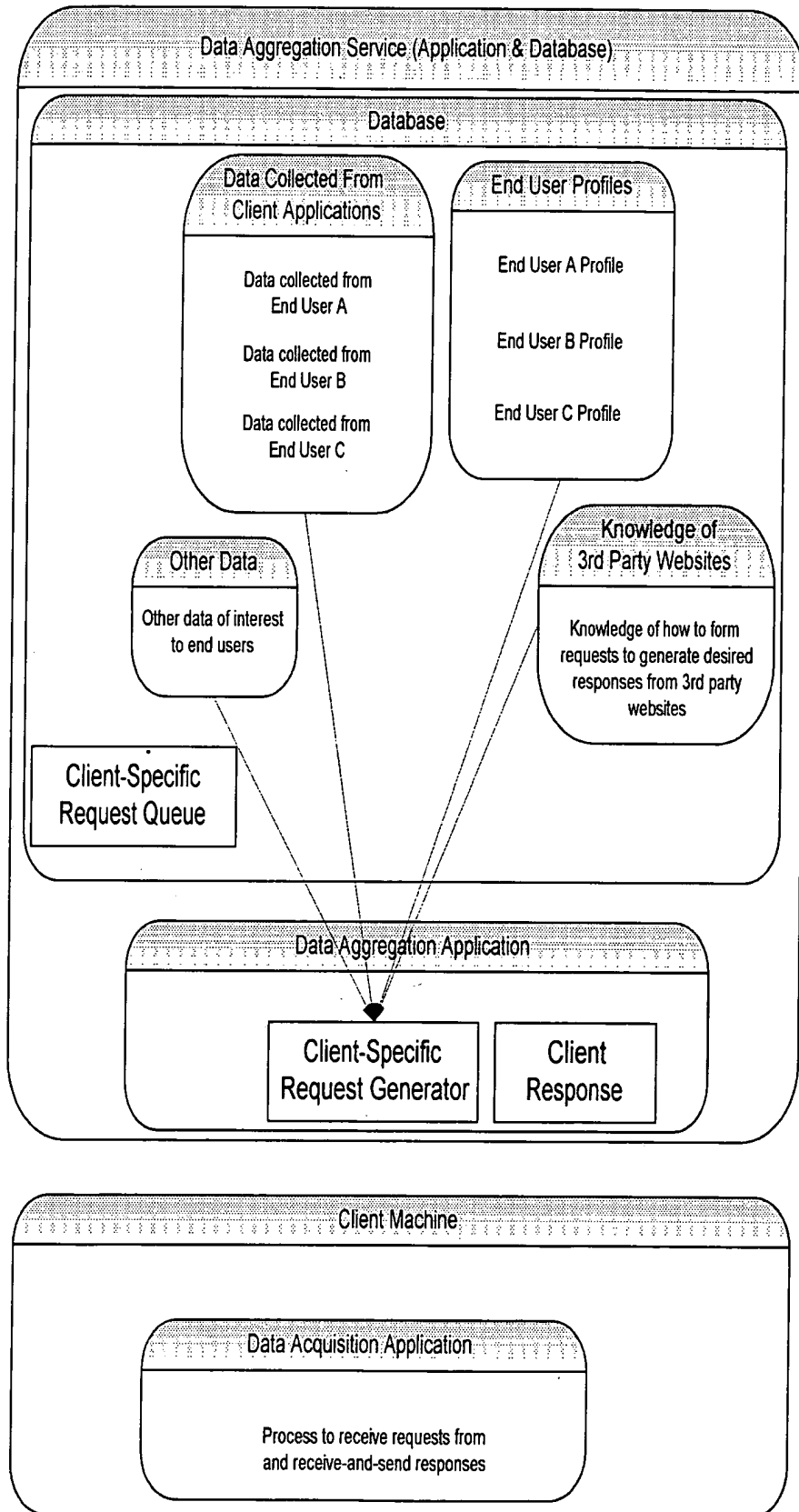


Figure 7a: Overall Process - Architecture

The overall architecture consists of one or more 3rd Party Websites, one or more Client Machines (each with a Data Acquisition Application and/or Client Interaction Application) and a Data Aggregation Service (with a Data Aggregation Application, End User Interaction Application, and Database)

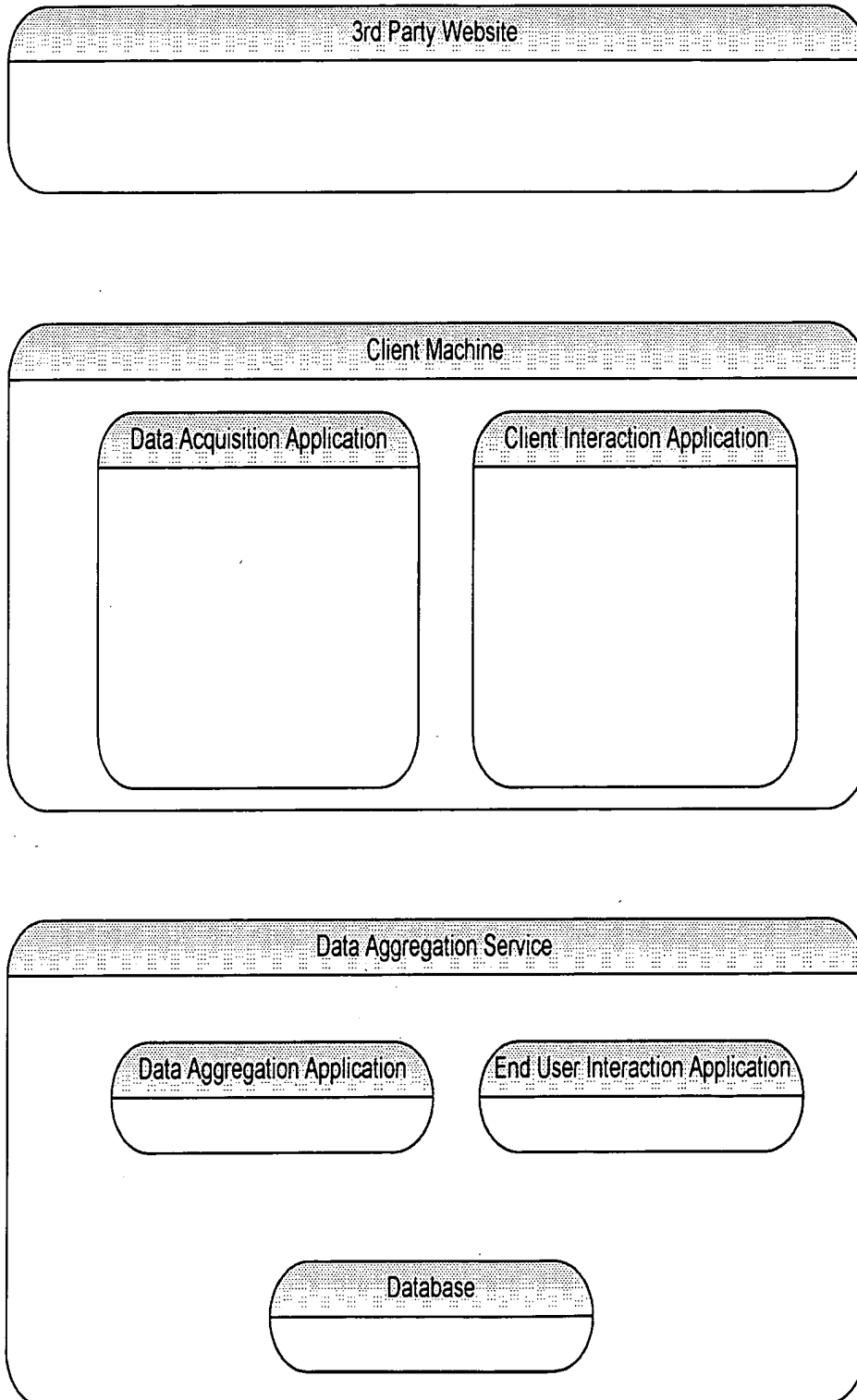


Figure 7b: Overall Process - Step 1

End user creates or updates personal profile by
accessing end user interaction application via
client interaction application

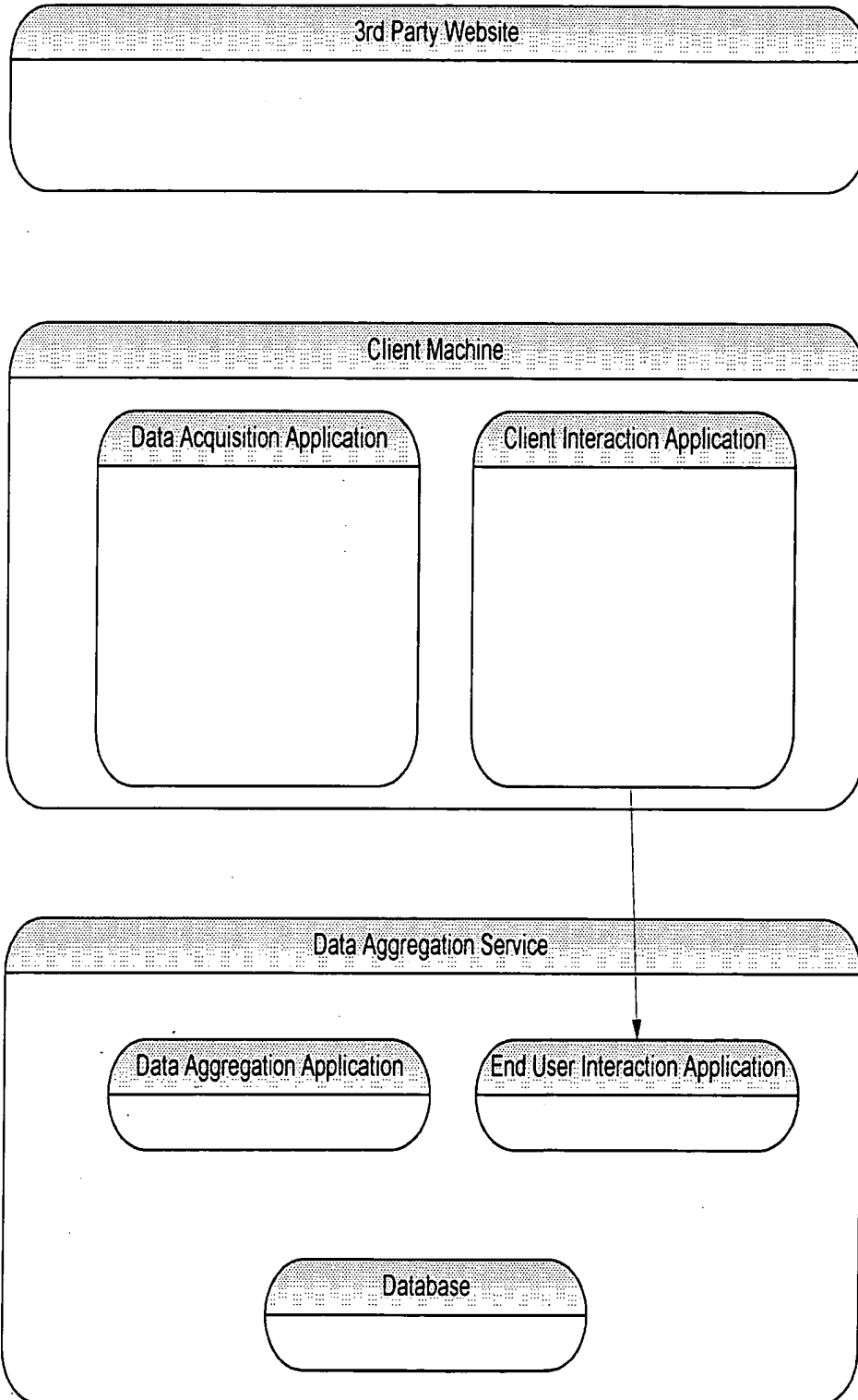


Figure 7c: Overall Process - Step 2

End User Interaction Application stores end user's profile in Data Aggregation Service database

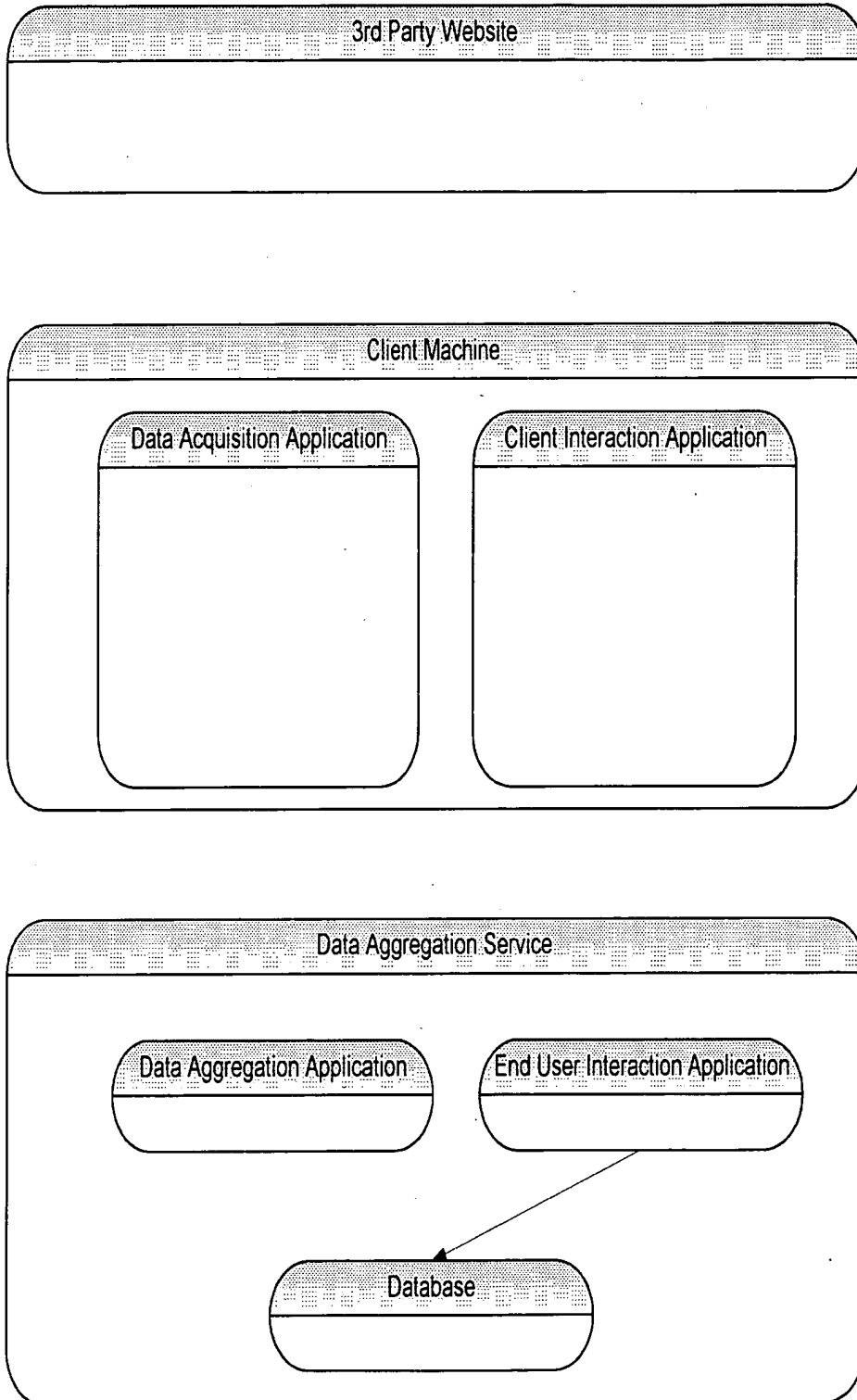


Figure 7d: Overall Process - Step 3

Data Aggregation Application accesses end user's profile from Data Aggregation Service database

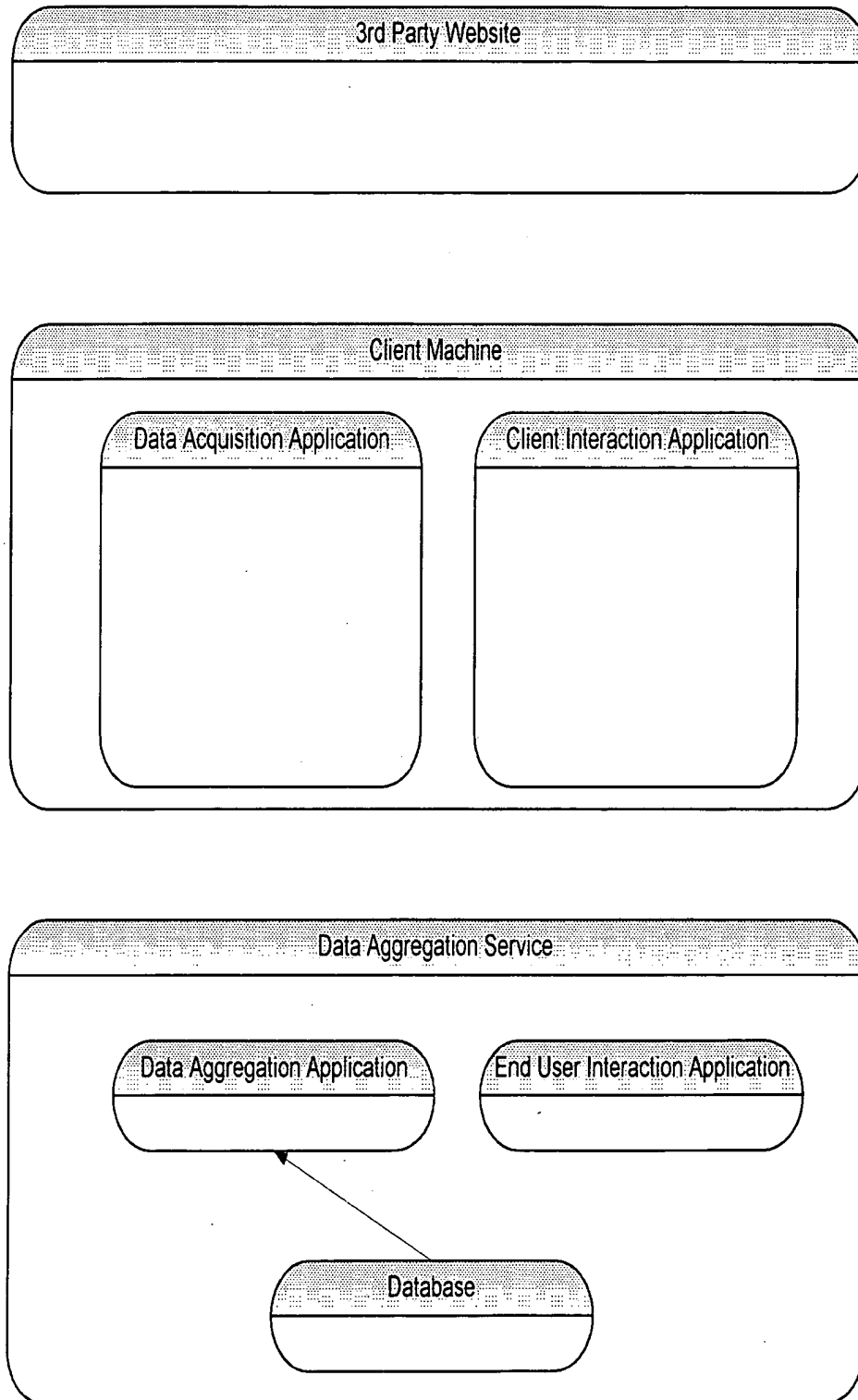


Figure 7e: Overall Process - Step 4

Data Aggregation Application uses end user's profile to generate one or more requests and store them on the end user's client-specific request queue where it is picked up by the end user's Data Acquisition Application

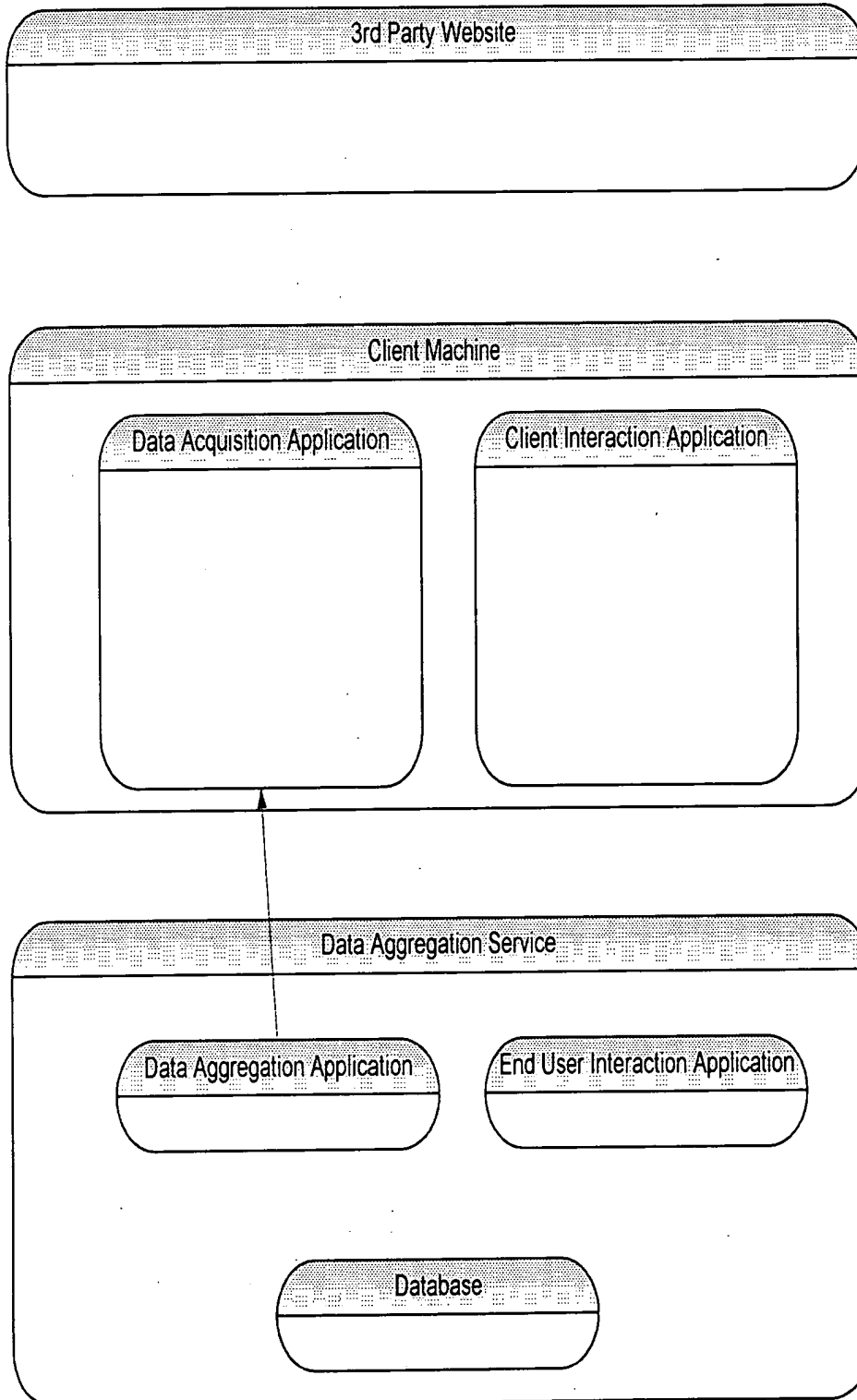


Figure 7f: Overall Process - Step 5

Data Acquisition Application issues request(s)
to 3rd Party Website(s).

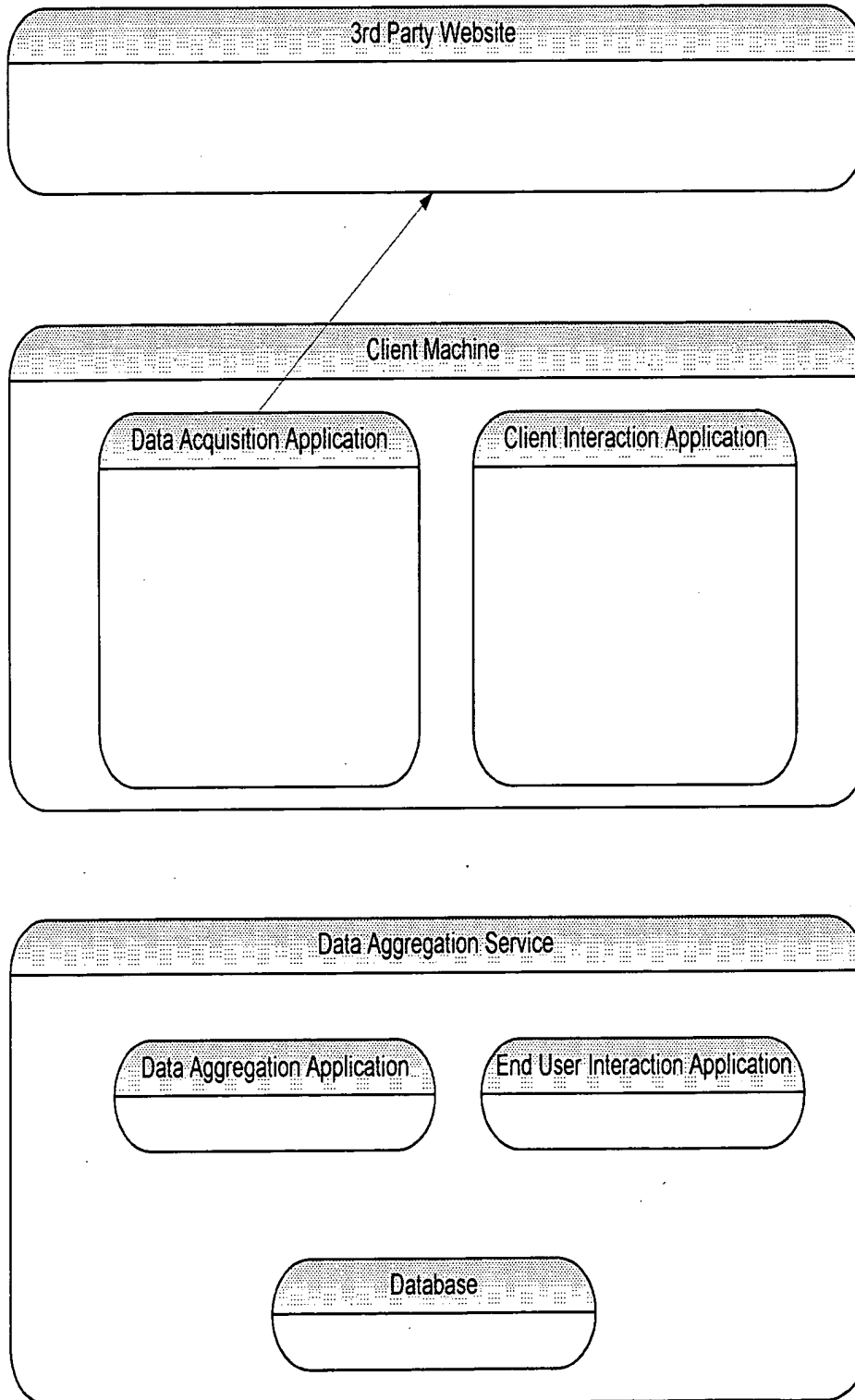


Figure 7g: Overall Process - Step 6

3rd Party Website replies to Data Acquisition
Application request with a response

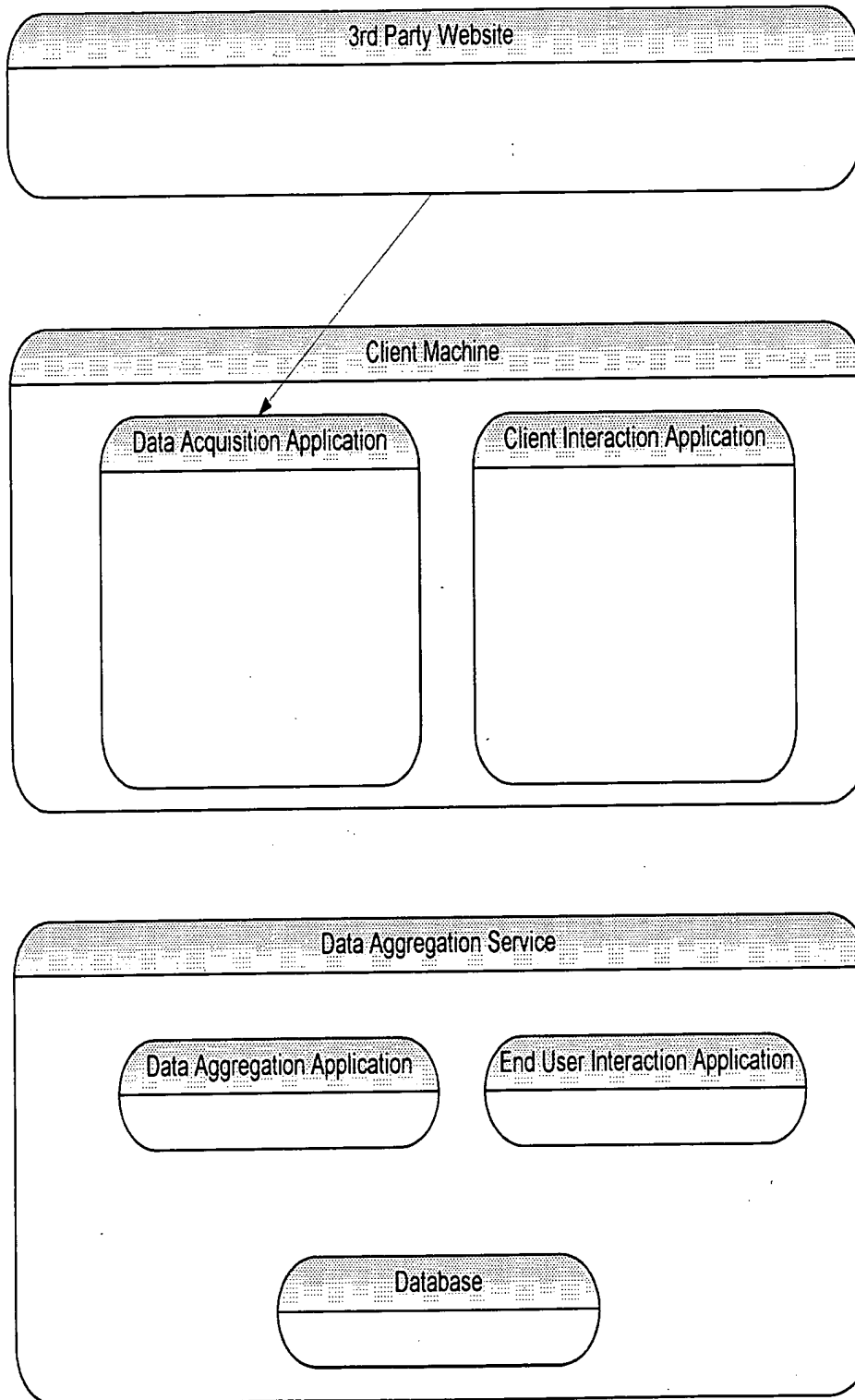


Figure 7g*: Overall Process - (optional) Step 6 1/2

3rd Party Website reply to Data Acquisition
Application request triggers additional request(s).
Repeat Step 6 1/2 as many times as necessary to
acquire all desired data pursuant to initial request.

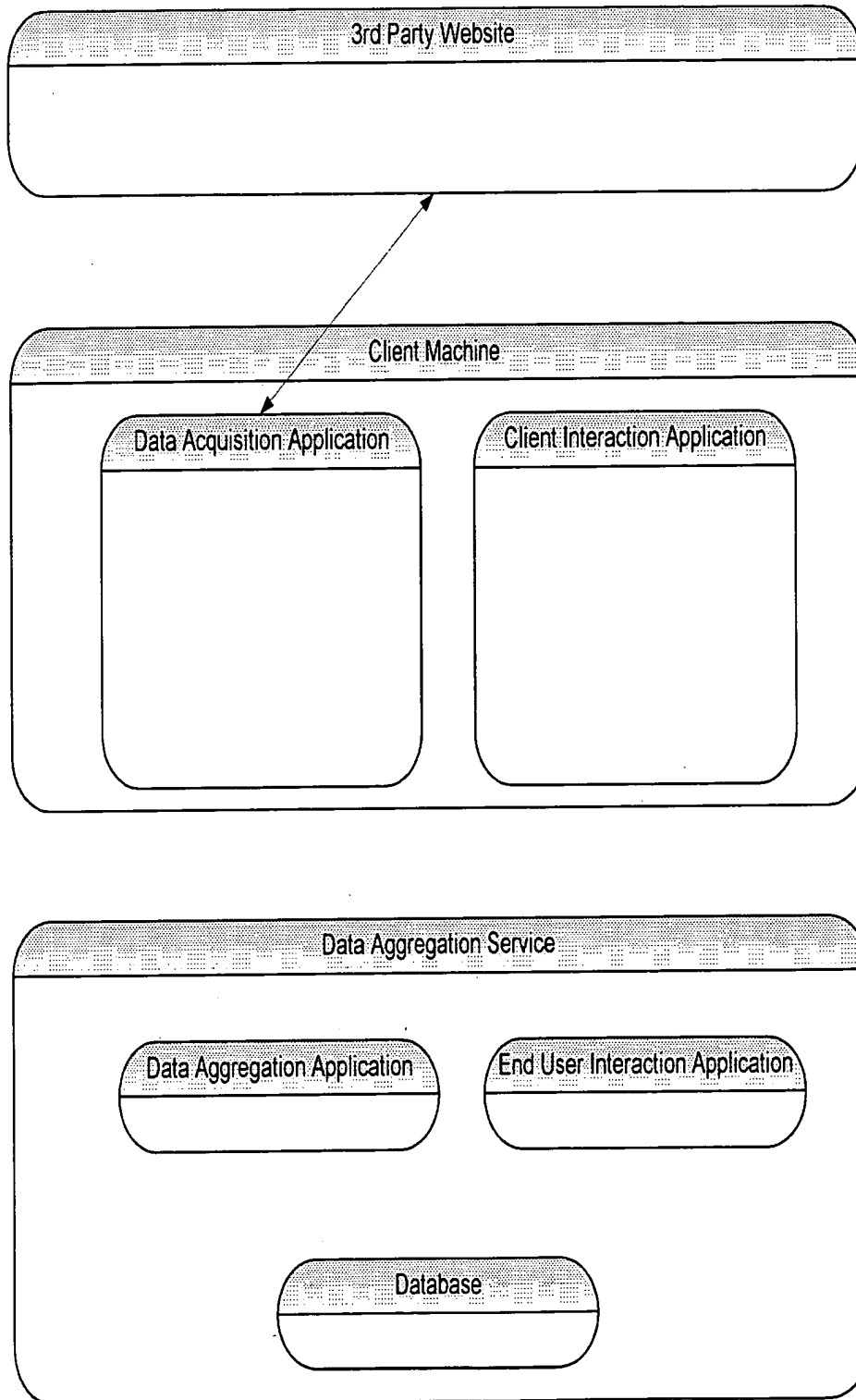


Figure 7h: Overall Process - Step 7

Data Acquisition Application passes response
(or a transformed, modified version) to the Data
Aggregation Application

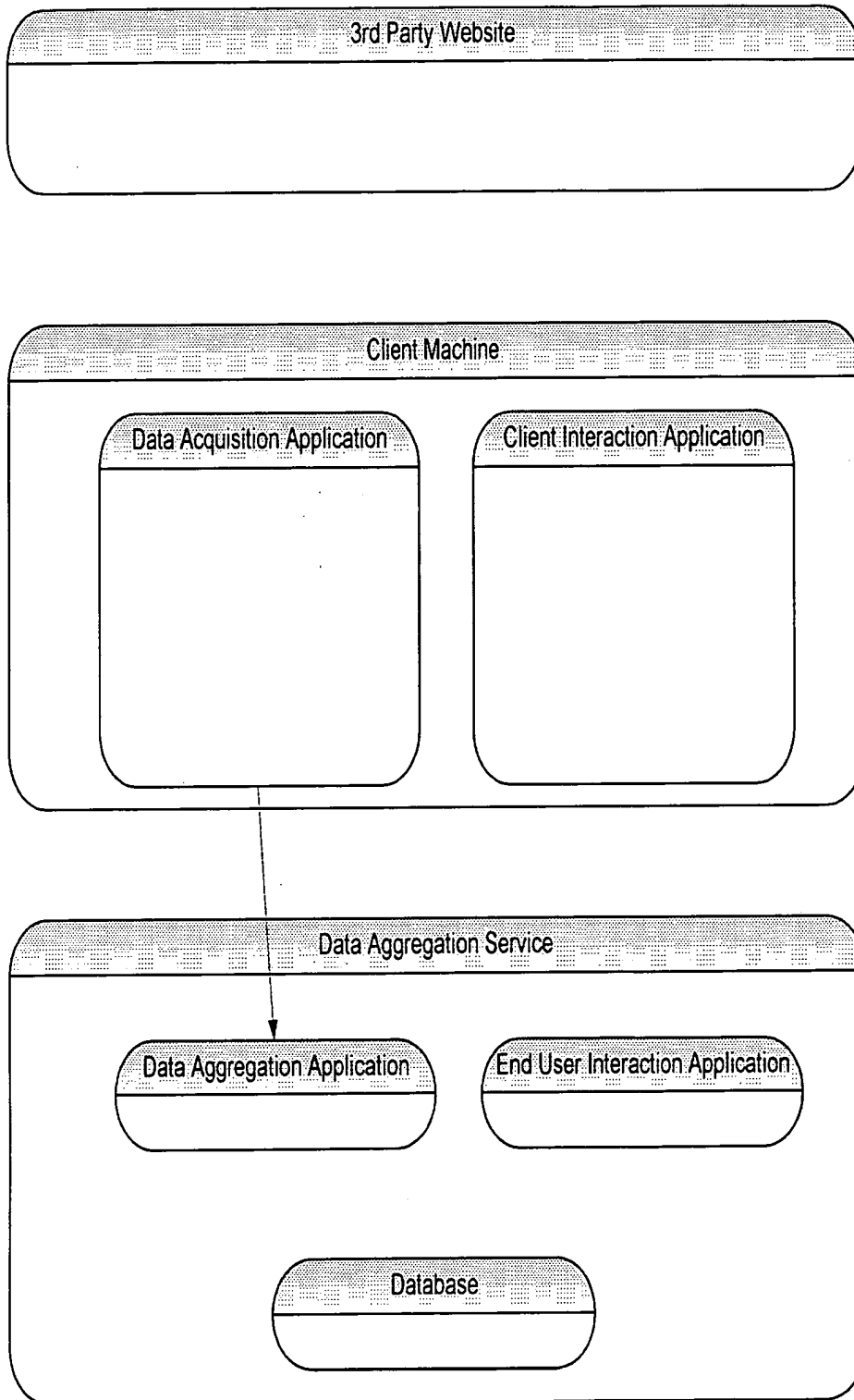


Figure 7i: Overall Process - Step 8

Data Aggregation Application stores the data in the Data Aggregation Service database

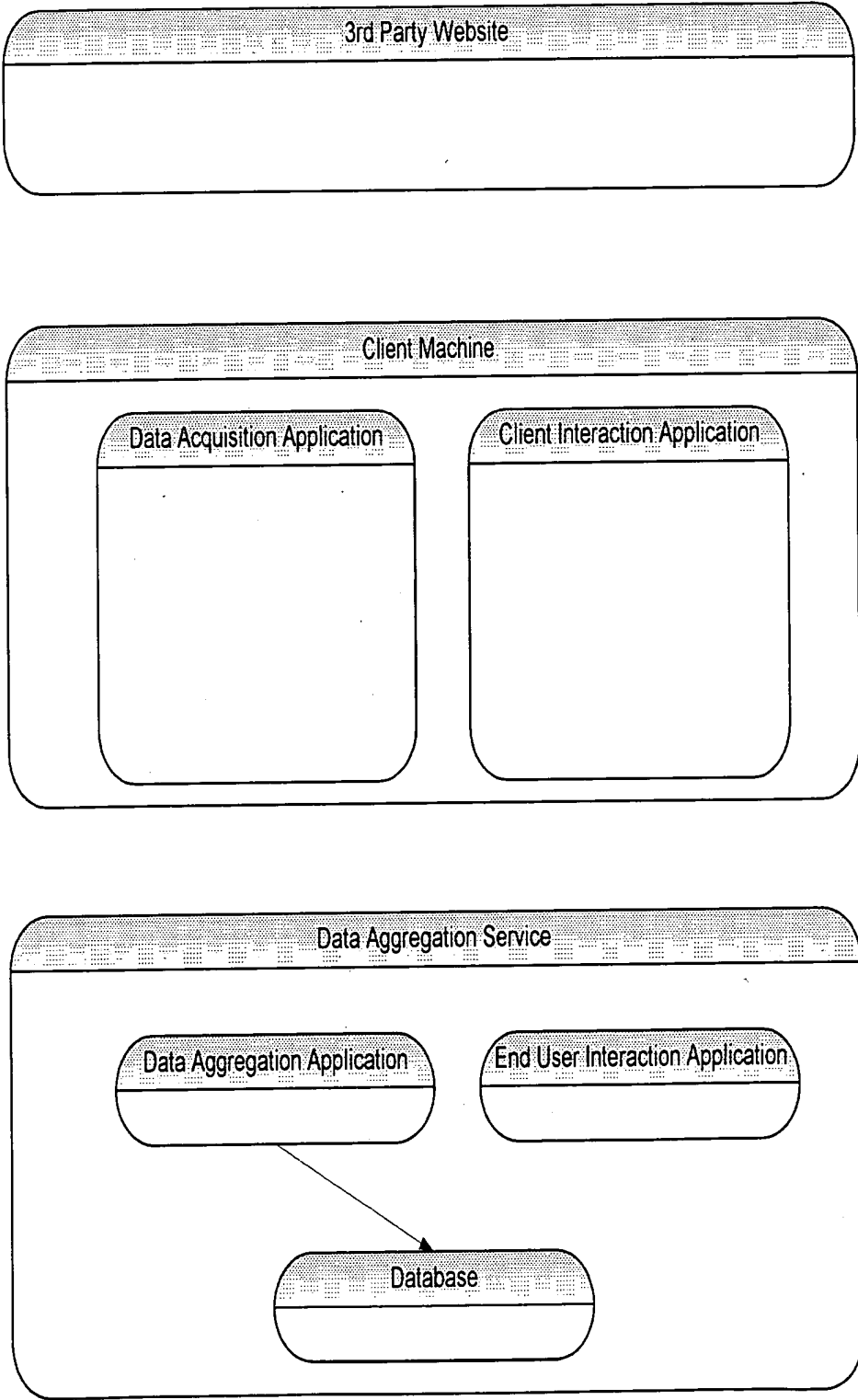


Figure 7j: Overall Process - Step 9

Repeat Steps 3 - 8 as many times as
necessary to store all data relevant to
end user's profile(s)

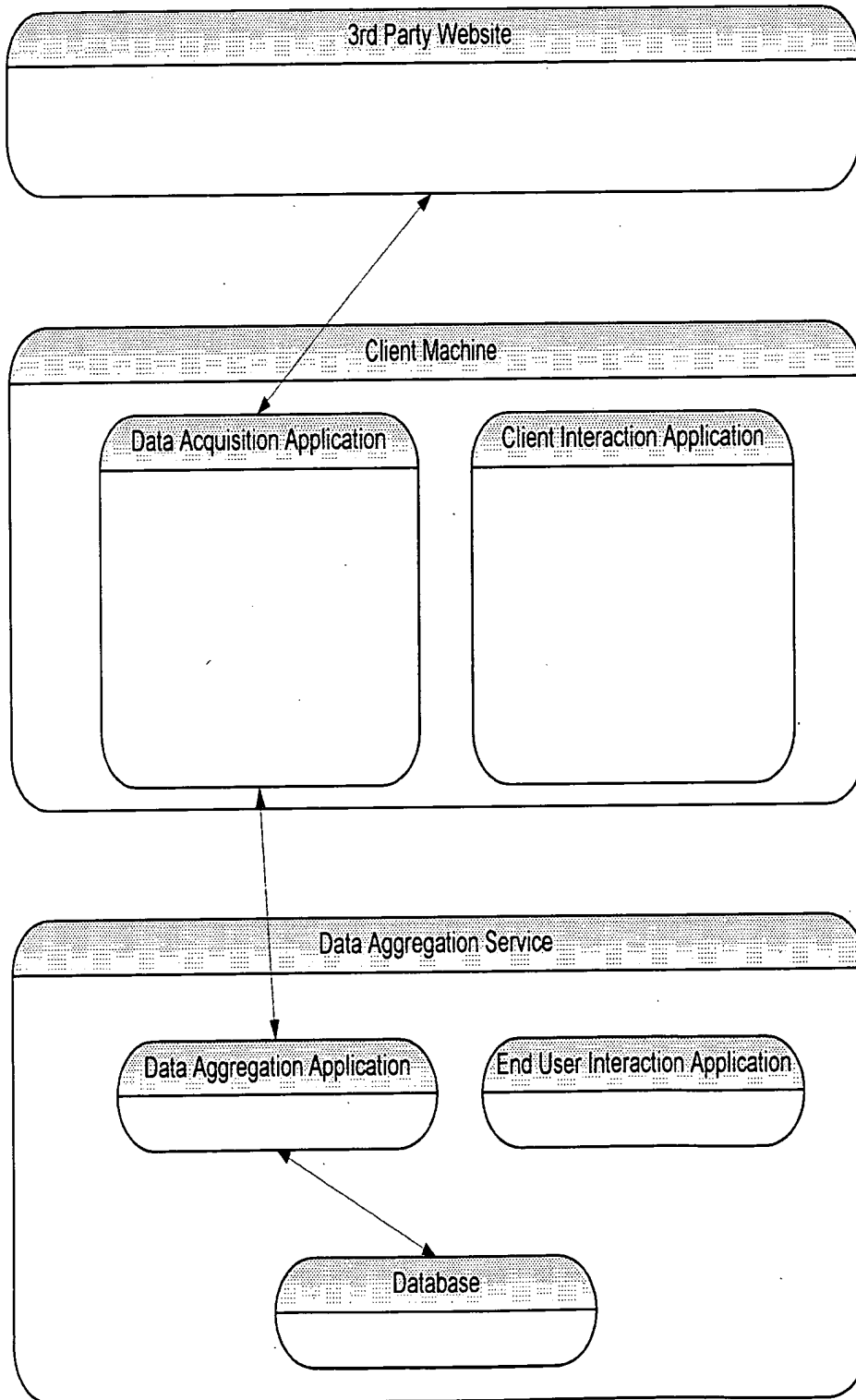


Figure 7k: Overall Process - Step 10

Client Interaction Application sends request for information to End User Interaction Application on the Data Aggregation Service

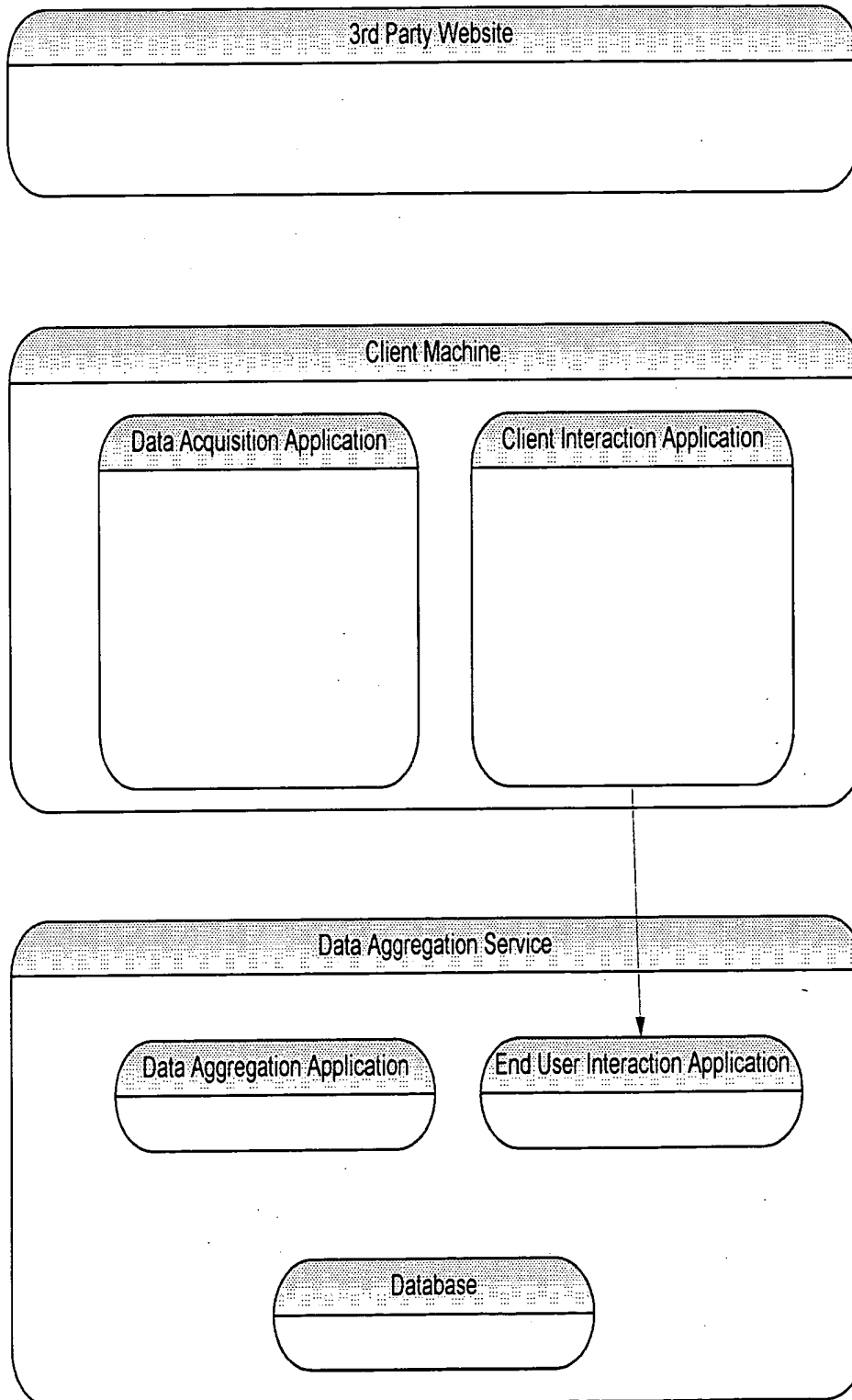
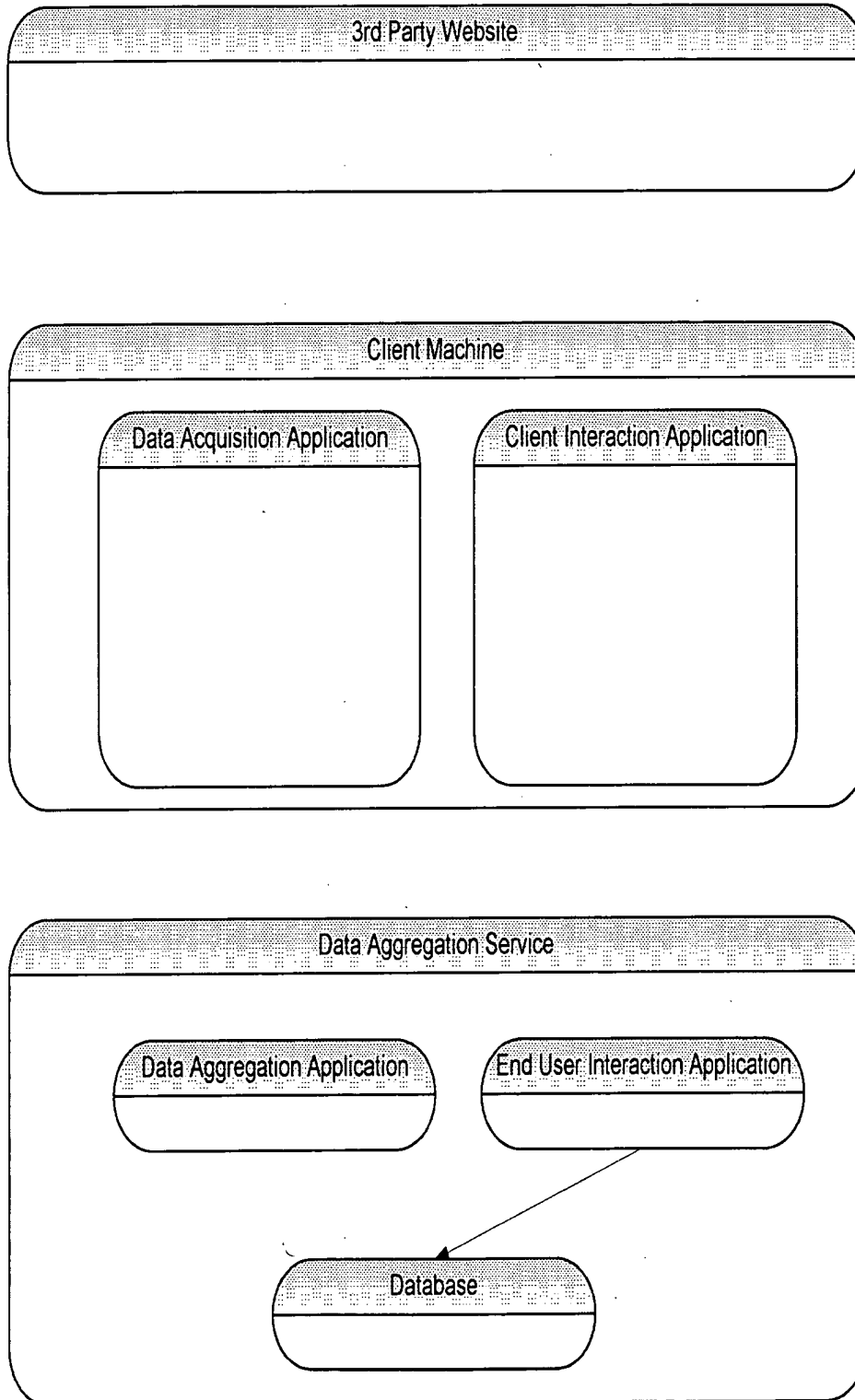


Figure 7l: Overall Process - Step 11

End User Interaction Application on the Data
Aggregation Service sends request for
information to Database



**Data Aggregation Service Database replies
to End User Interaction Application
with requested data**

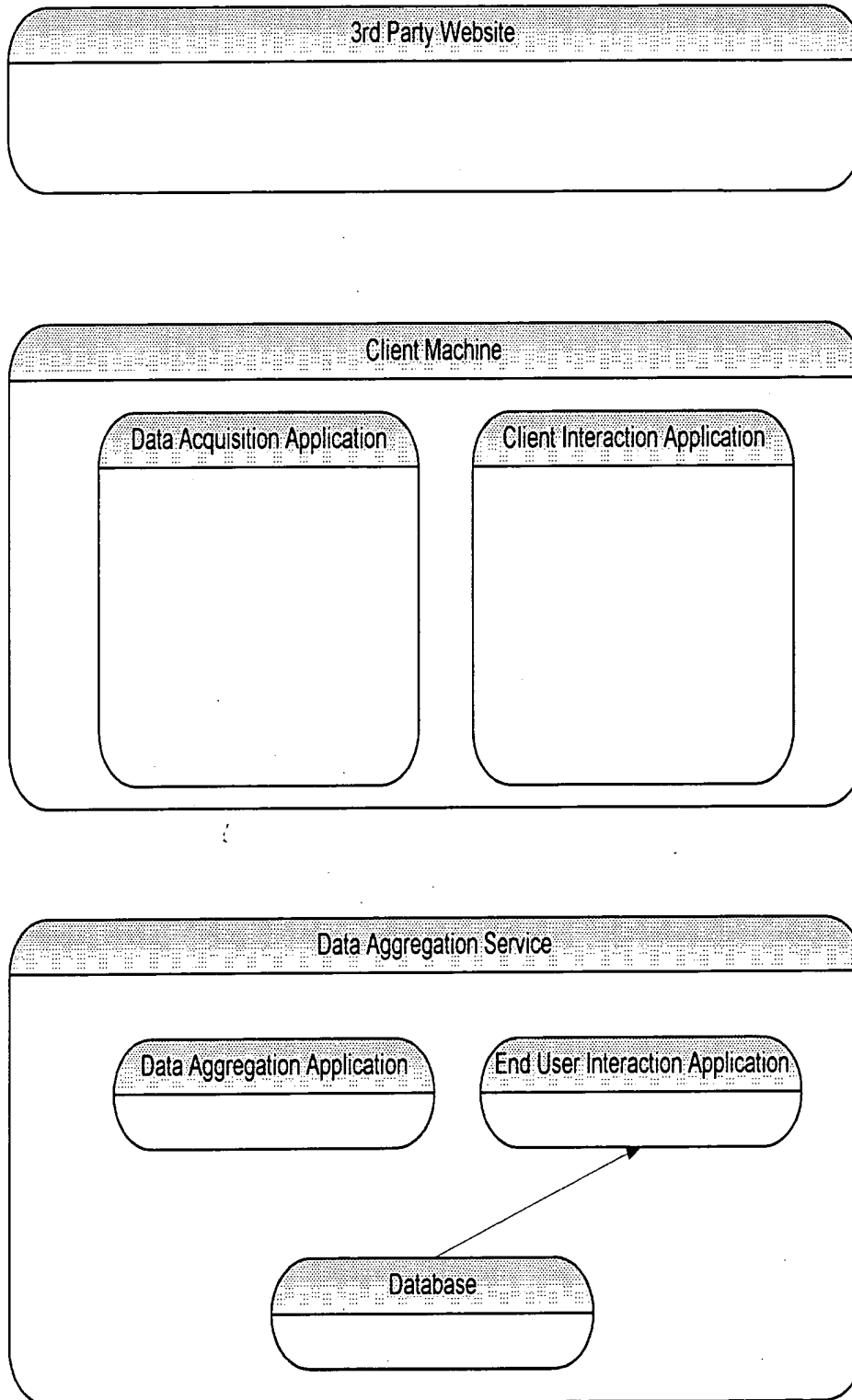


Figure 7n: Overall Process - Step 13

End User Interaction Application
replies to Client Interaction Application
with requested data

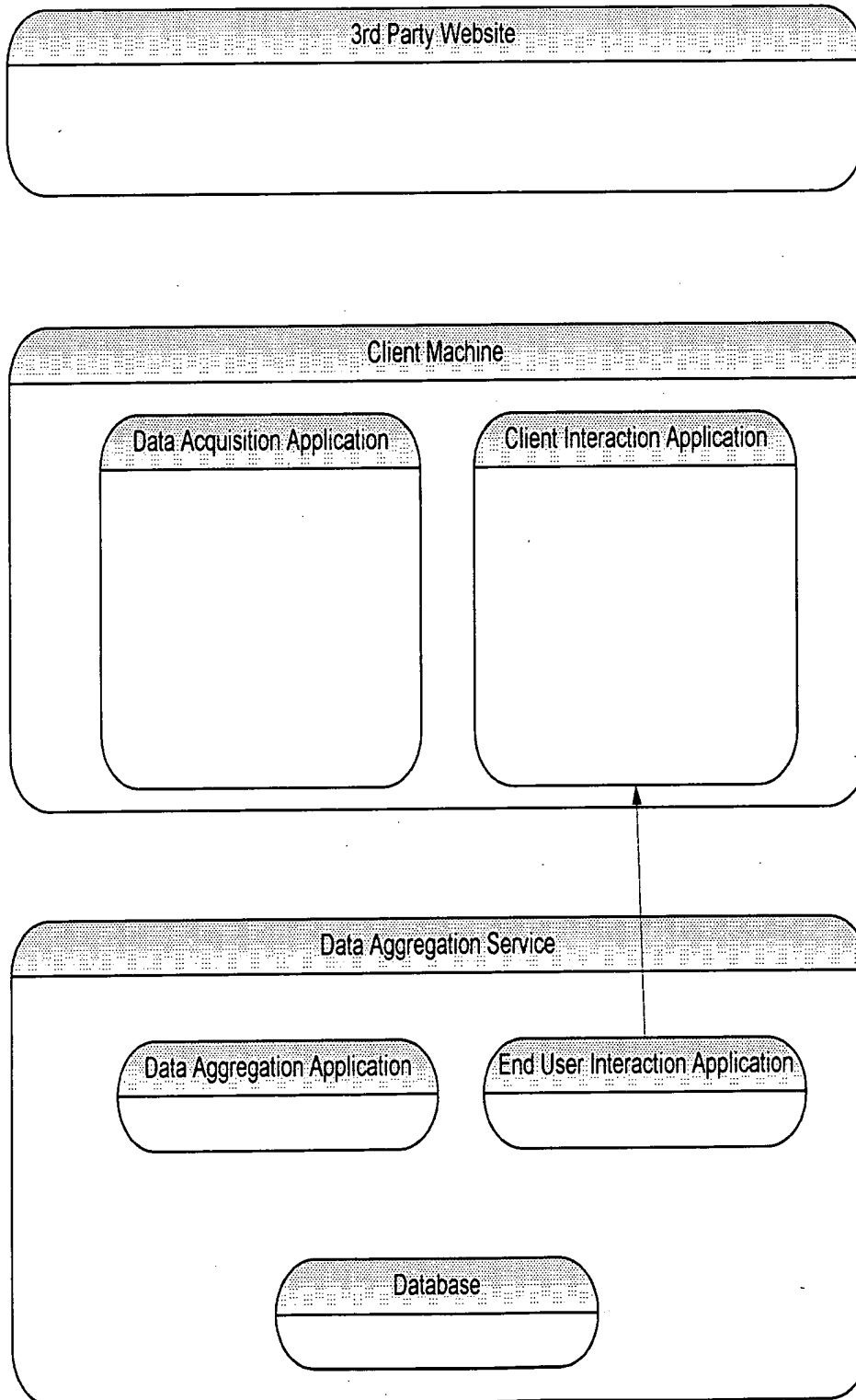


Figure 7o: Overall Process - Step 14

Repeat Steps 10 - 13 every time the Client Interaction Application requests information from the Data Aggregation Server

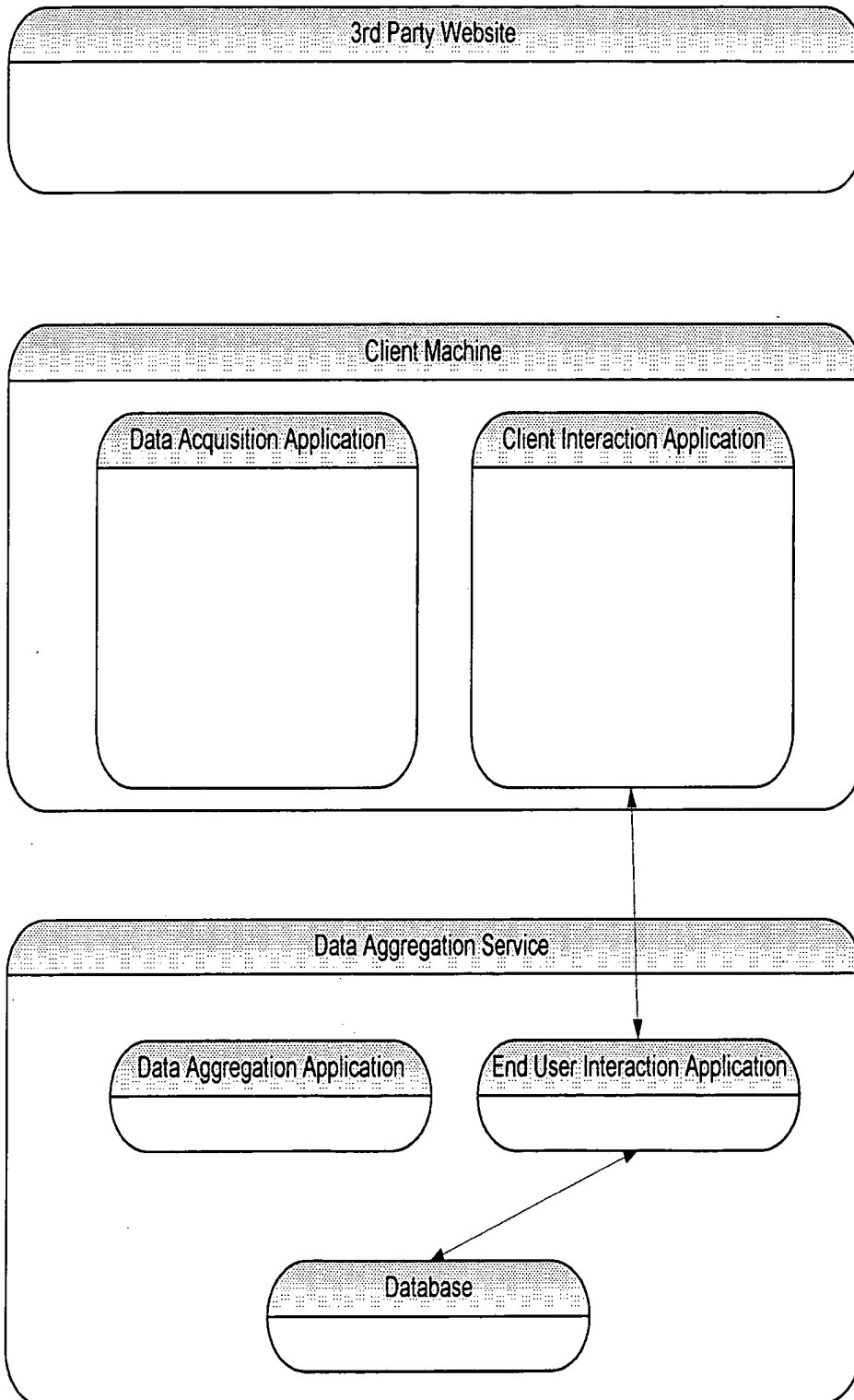


Figure 8a: Client Browsing (Step 1: User Visits Website)

An end user traverses a computer-based network (e.g., "surfs" the Internet using a Web browser) and visits a 3rd Party Website that serves to the Client Machine data of interest to the Data Aggregation Service

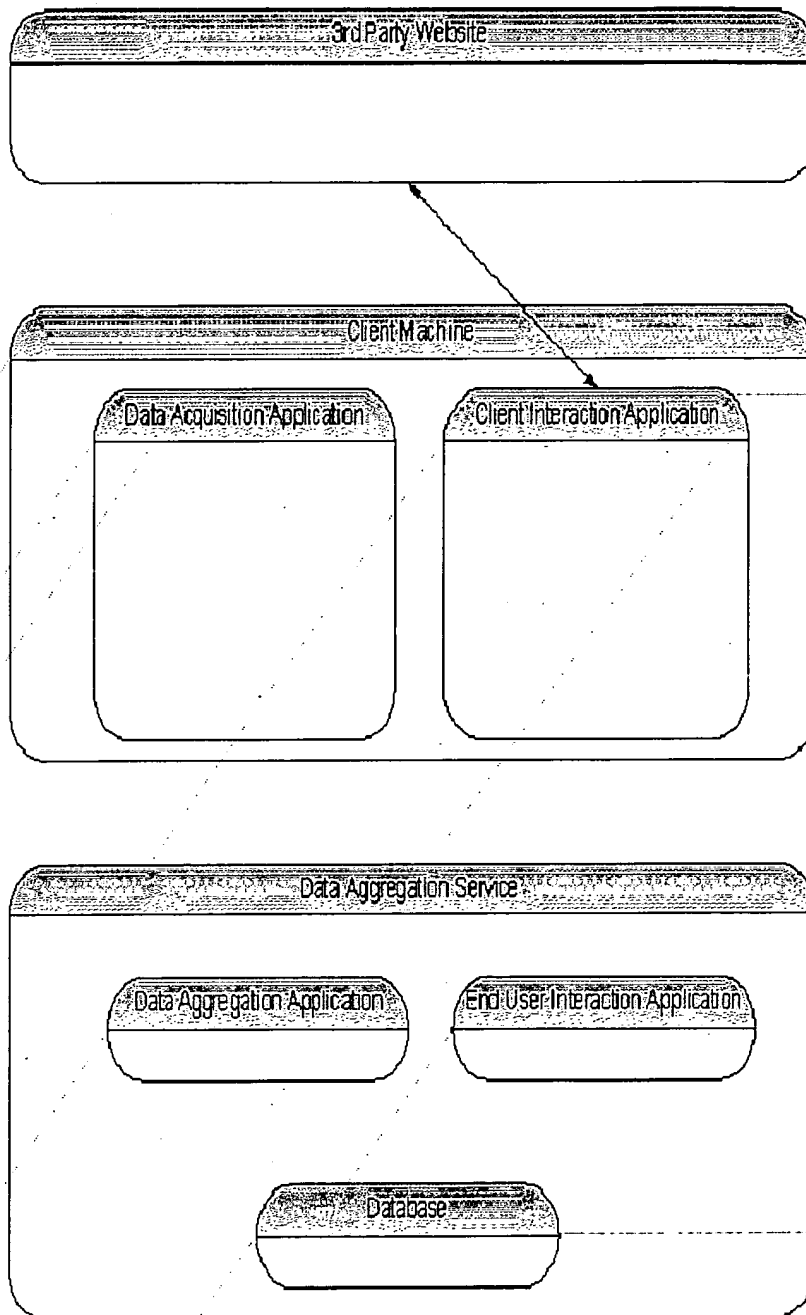


Figure 8b: Client Browsing (Step 2: Listening Process)

While the Data Acquisition Application is (with the user's knowledge and permission) constantly monitoring and interpreting the content of the user's browsing session, it detects that the recently-downloaded 3rd Party Website data is of interest to the Data Aggregation Service and it extracts desired data.

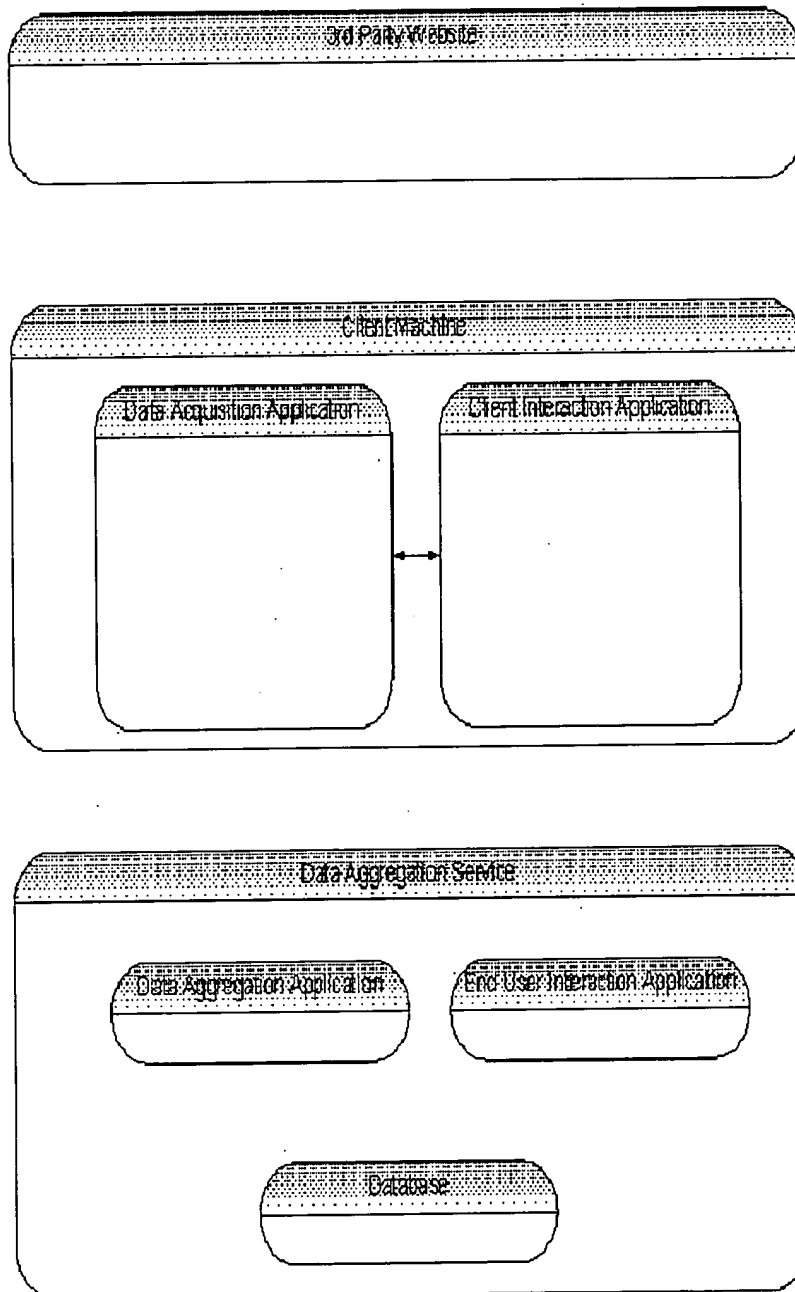


Figure 8c: Client Browsing (Step 3: Upload Data to Server)

After detecting data of interest and possibly reformatting it, the Data Acquisition Application sends this data to the Data Aggregation Service

